In the Drawings

There are no amendments to the drawings.

Remarks

By this Amendment Applicant has amended Claims 1, 6, 17, 22, 27 and 32, cancelled Claims 2 – 5 and 7, and added new Claims 33 and 34. Applicant respectfully submits that no new matter was added by this amendment as all the limitations of these claims was previously described in the written descriptions and/or drawings.

The Examiner has rejected Claims 1 – 11, 14, 16, 17, 19, 20 and 27 – 29 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,627,583 to Nakamura et al. ("the '583 patent"). The Examiner has further rejected Claims 12, 13 and 21 under 35 U.S.C. § 103(a) as unpatentable over the '583 patent in view of U.S. Patent Application Publication No. 2002/0095501 A1 ("the '501 application"). The Examiner has still further rejected Claim 15 under 35 U.S.C. § 103(a) as unpatentable over the '583 patent in view of U.S. Patent No. 6,638,212 to Oshima ("the '212 patent"). The Examiner has yet further rejected Claims 18, 22 – 24, 26 and 30 – 32 under 35 U.S.C. § 103(a) as unpatentable over the '583 patent in view of U.S. Patent No. 6,295,082 to Dowdy et al. ("the '082 patent"). These rejections are respectfully traversed.

<u>Claims 1, 22, 27 and 32</u>

As variously amended, Claim 1 requires among other limitations, a <u>software</u> program stored on said storage device, the software program configuring the programmable hardware device, and <u>the programmable hardware device executing the software program</u>. Additionally, Claim 22 requires among other limitations, a software program

executing on the camera control unit for configuring a configurable portion of the camera control unit for configuring hardware of said camera control unit, and <u>the software program executing on the camera control unit for enabling the camera control unit to process the image data</u>. Claim 27 requires among other limitations, a processor located on said camera control unit for retrieving and executing a software program to configure a configurable hardware device, and the <u>software program executing on the configurable hardware device</u> and enabling the camera control unit to process the image data. Claim 32 requires among other limitations, configuring a programmable device of the camera control unit to enable the camera control unit to process image data transmitted from the camera, and <u>executing the software program on the configured programmable device</u> to process image data. Applicant respectfully submits that none of the cited prior art discloses or teaches these limitations.

For example, the '583 patent discloses that "[t]he signal processing circuit 16 is formed of a logic cell array (LCA), which is one type of field programmable gate array (FPGA), so that it can be programmed on the basis of circuit data", that a "logic circuit is formed by a configuration program based on the circuit data" and further that "circuit data is loaded from data ROM 19 into the signal processing circuit 16. Thereupon, the signal processing circuit 16 forms a processing circuit for performing optimum processing on each of the connected endoscopes." (col. 4, lines 5 – 8, 29 – 30 & 53 – 57; *See* col. 12, lines 29 – 47 where "circuit formation data" is described as separate from "control means used for rearranging the formation of said programmable logic elements

based on said circuit formation data corresponding to the type of the electroendoscope connected.") Therefore, while circuit data may be loaded from a memory, this raw data is used by a configuration program (or control means) to configure the array, which in turn, upon configuration, processes the received signals. The circuit data however, cannot be described as a software program, but instead the '583 patent simply teaches "circuit data corresponding to the type of endoscope" and "circuit formation data corresponding to at least one of said plurality of types of electroendoscopes." (col. 7, lines 35 – 36, col. 12, lines 31 – 32).

Nowhere however, is there taught a programmable hardware device (or camera control unit) that executes a software program loaded thereon from a storage device as variously required by the claims. Rather, the '583 patent teaches that the circuit data is loaded and used by a configuration program to configure an array. That is all the configuration program does, configure the array based on the circuit data. Once configured, the hardware processes the image data, not a software program. Claims 1, 22, 27 and 32 on the other hand specifically requires that not only does the software configure the programmable hardware device (or the camera control unit), but also that the programmable hardware device (or the camera control unit) then executes the software program.

The '583 patent however fails to teach, disclose or suggest, a software program that is executed by the programmable hardware device (or the camera control unit) once configured to process image data as required by Claims 1, 22, 27 and 32. Appli-

cant further respectfully submits that the '082 patent also fails to teach or disclose this limitation but was cited by the Examiner as teaching a camera head that automatically downloads information about the camera head upon connection to a control unit.

Applicant further submits that it would not be obvious to modify the '583 patent to include this limitation as it is directed towards a logic cell array. Once configured, this hardware system does not need a software program executing thereon, but rather is hard configured. To modify the '583 patent according to the present invention would require a complete redesign of the '583 patent to include abandonment of the hard configuration device and inclusion of a programmable software driven device, provision of a software program to run the programmable device, and memory storage for storing the loaded program that executes on the configured device. It is well settled that the use of hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is impermissible. *See e.g., W. L. Gore and Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13, (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In the present case, Applicant respectfully submits that there is no motivation in the '583 patent or the '082 patent to abandon the primary teachings of these references according to the present invention.

Accordingly, Applicant respectfully submits that because the prior art fails to teach, disclose or suggest a software program for configuring a programmable (configurable or camera control unit) and executing of the software program on by the pro-

grammable (configurable or camera control unit) as variously required by Claims 1, 22,

27 and 32, the prior art cannot anticipate or render Claims 1, 22, 27 and 32 obvious.

Claims 17 and 33

Claims 17 and 33 both require among other limitations, a storage device re-

motely located from and accessible by a camera control unit (configurable hardware de-

vice), a software program stored on said storage device, and the software program exe-

cuting on said camera control unit (configurable hardware device) for modifying hard-

ware of said camera control unit (configurable hardware device) for receiving the image

data.

The '583 patent teaches that a "logic circuit is formed by a configuration

program based on the circuit data." (col. 4, lines 29 – 30). The '583 patent is silent as to

the storage location of this configuration program, however, the only the circuit forma-

tion data, which is use by the configuration program, is identified as being remotely lo-

cated from the camera control unit. In the present invention, a software program for

configuring the hardware is remotely accessible by the camera control unit. This pro-

vides a number of distinct advantages over the '583 patent. For example, if the configu-

ration program is limited to the camera control unit, this program will have to variously

be updated by manual means as new features and equipment is added. Whereas, the

program being remotely according to the present invention, may be updated at the re-

mote location and whenever the camera control unit looks for that configuration pro-

gram, it will receive an updated version automatically. In this manner, one update to the configuration program will benefit each and every control unit that calls for that program. This also provides the manufacturer/supplier with valuable information regarding usage of the device and provides increases flexibility relating to licensing issues. For example, it would be a rather simple matter to increase/decrease a user's access authorization to particular software programs. Applicant respectfully submits that these advantages were not contemplated by and cannot be attained by the cited prior art.

Accordingly, Applicant respectfully submits that because the prior art fails to teach, disclose or suggest a storage device remotely located from and accessible by said camera control unit, a software program stored on said storage device, and the software program executing on said camera control unit for modifying hardware of said camera control unit for receiving the image data as required by Claim 17, the prior art cannot anticipate or render Claim 17 obvious.

Claims 12, 13 and 21

Applicant has respectfully submitted that there is no motivation to combine the '583 patent with the '501 application as the Examiner has suggested. In response the Examiner has stated that "both references are concerned with configuring a processing device to interface with a peripheral device and are therefore considered to be reasonable pertinent to the particular problem with which the applicant was concerned." (Official Action, p. 3). It is well settled that the mere fact that references can be combined or

modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). In this case, the '501 application is directed to "a peripheral device, such as a USB device, is initially connected to the host device, or when the host device with the newly connected USB is energized." (abstract). The '501 application is therefore directed to the attachment of various kinds of peripherals to computer systems, not to electroendoscopes, which do not use USB devices. Applicant respectfully submits then that combination of the '583 patent with the '501 application would result in an endoscope apparatus that upon connection with the camera control unit via a USB port, downloads driver information. (abstract). One would then have to further modify this combination according to the present invention to arrive at the present claims 12, 13 and 21. Applicant respectfully submits that this further modification is not obvious.

Claims 30 and 34

Applicant has added new Claim 34, which requires among other elements, a configurable hardware device including a configurable portion and a non-configurable portion, a software program executing on the non-configurable portion of the configurable hardware device, the non-configurable portion of said configurable hardware device receiving configuration data, and the software program modifying the configurable portion of the configurable hardware device based upon the configuration data for receiving image data. (See, pp. 5 – 6; *See also* Claim 23). Claim 30 requires, a configurable hardware device that comprises a non-overwritable portion for requesting a program.

Applicant respectfully submits that none of the cited prior art teaches, discloses or suggests a <u>non-configurable portion</u> of a configurable hardware device. Rather, the '583 patent discloses that "[t]he signal processing circuit 16 is formed of a logic cell array (LCA), which is one type of field programmable gate array (FPGA), so that it can be programmed on the basis of circuit data" and a "matrix of logic blocks (configurable logic block: CLB 122 is provided inside the LCA 121, and a plurality of I/O blocks (IOB) 123 are arranged in the peripheral portion of the logic blocks 122. The functions of these logic blocks 122 and I/O blocks 123, and the internal connection thereof may be configured." (col. 4, lines 5 – 8 & 24 – 30; *See* FIG. 3). Therefore, the '583 patent teaches that the LCA is entirely configurable and there is no non-configurable portion as required by Claims 30 and 34.

Accordingly, Applicant respectfully submits that because none of the cited prior art teaches, discloses or suggests a <u>non-configurable portion</u> (or a non-overwritable portion) of a configurable hardware device as required by Claims 30 and 34, no combination of the prior art can render Claims 30 and 34 obvious.

It is respectfully submitted that Claims 1, 6 and 8 – 34, all the claims remaining in

the present application, are in order for allowance and early notice to that effect is re-

spectfully requested.

Respectfully submitted,

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